ABSTRAK

Gelombang panas laut (GPL) merupakan peningkatan suhu permukaan laut (SPL) yang terjadi secara ekstrem dimana kondisi suhu akan melebihi nilai ambang batas normal dan berlangsung setidaknya lima hari berturut-turut atau lebih. Peristiwa GPL dapat disebabkan oleh adanya fenomena *Indian Ocean Dipole* (IOD) yang terjadi di Samudra Hindia. Gelombang panas laut dapat digambarkan dalam metriks yang terdiri dari frekuensi, intensitas dan durasi. Tujuan dari penelitian ini untuk mengetahui karakteristik GPL di perairan selatan Jawa pada tahun 2008 - 2020 serta mengetahui hubungan GPL dengan fenomena IOD. Penelitian ini menggunakan data SPL yang diperoleh dari *Global Ocean OSTIA Sea Surface Temperature and Sea Ice Reprocessed* dan indeks IOD. Metode yang digunakan adalah menghitung rata-rata klimatologis SPL, pendeteksian kejadian GPL dan perhitungan nilai korelasi antara anomali SPL saat GPL dengan indeks IOD. Frekuensi kejadian GPL ditemukan sebanyak 29 kejadian dengan intensitas maksimum tertinggi yaitu 2,15°C. Durasi kejadian terpanjang yaitu 36 hari dan terpendek 5 hari. Kejadian GPL terbanyak ditemukan pada tahun 2010 sebanyak 6 kejadian dan 2016 sebanyak 12 kejadian. Hubungan antara anomali SPL saat terjadinya GPL dan indeks IOD memiliki nilai yang kuat dan terbalik, yang berarti ketika anomali SPL meningkat maka indeks IOD akan menurun.

Kata kunci: gelombang panas laut; IOD; perairan selatan Jawa

ABSTRACT

Marine heatwaves (MHWs) is an extreme increase in sea surface temperature (SST) in which temperature conditions exceed the threshold values during five consecutive days or more. MHWs events can be caused by the Indian Ocean Dipole (IOD) phenomenon that occurs in the Indian Ocean. Marine heatwaves can be described in metrics consisting of frequency, intensity and duration. This study investigated the characteristics of MHWs in the waters south of Java from 2008 to 2020, as well as to understood the relationship between MHWs and the IOD phenomenon. This research consists of SST data obtained from the Global Ocean OSTIA Sea Surface Temperature and Sea Ice Reprocessed, and the IOD index. The methodology involved calculating the climatological mean of SST, detecting MHW events, and calculating the correlation between SST anomalies during MHWs and the IOD index. Twentynine MHWs events were identified during the research, with the highest maximum intensity has recorded at 2.15°C. The longest duration of an MHW event was 36 days, while the shortest lasted for 5 days. The most frequent MHWs events occurred in 2010 with six events, and in 2016 with twelve events. The relationship between SST anomalies during MHWs and the IOD index was found to be strong and inverse, indicating when SST anomalies increased the IOD index showed a tendency to decrease.

Keywords: marine heatwaves; IOD; south Java Sea